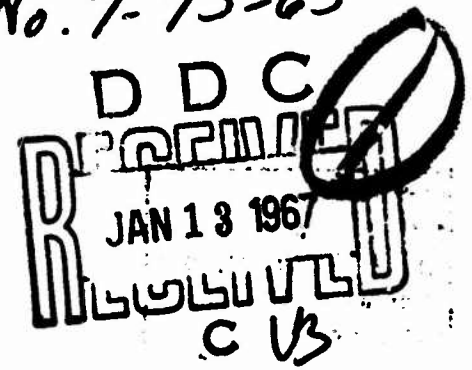


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TRANSLATION 150 (T150)
DEPARTMENT OF MEDICAL ZOOLOGY
UNITED STATES
NAVAL MEDICAL RESEARCH UNIT No. 3
c/o AMERICAN EMBASSY
CAIRO, U.A.R.



AD 645008

TRANSLATION FROM RUSSIAN*. CHUMAKOV, M. P., SARMANOVA, E. S., SILJUNOVA, N. V., TAPUPERE, V. O., SEMASHKO, I. V., and KARMSHEVA, V. YA. (1964). Isolation of one more arbovirus in the Kemerovo region from the blood of a sick child bitten by a tick. (Abstracts of papers of the 11th Scientific Conference of the Institute of Poliomyelitis and Encephalitis). In: Tick-borne encephalitis, Kemerovo tick-borne fever, hemorrhagic fever, and other arbovirus infections. Moscow, pp. 13-14.

In addition to the already described arboviruses, the agent of tick-borne encephalitis (spring-summer) and the virus of Kemerovo tick-borne fever in 1963 in Kemerovo region (western Siberia), we found another peculiar arbovirus differing markedly from the above and from other viruses. It was isolated in chick embryo cell cultures from the blood of a five-year old patient with fever without signs of nervous system involvement. There was a history of a tickbite shortly before the onset.

The isolate (strain 15) was capable of multiplying in chick embryo cell cultures, producing cytopathic changes 72 to 96 hours after inoculation. The average titre in this culture was 4.14×10^5 TCID₅₀ per ml.

Strain 15 did not multiply in other cultures tested including primary M. rhesus monkey kidney cell, rabbit kidney cell, dog puppy kidney, human embryo, lung, and kidney, and continuous cultures of human amnion, HeLa, and pig embryo kidney cells.

Strain 15 produces large definite plaque colonies in chick embryo tick cultures under the agar overlay according to Dullbecco's method. Virus titres by this method were in the average of $10^{5.2}$ PFU per ml.

The isolate does not cause the death of chick embryos nor multiplied in 6-7 day old chick embryos inoculated in the chorio-allantoic cavity or into the yolk sac.

During the first six passages in chick embryo cell cultures, strain 15 was not pathogenic for adult and newborn white rats, guinea pigs, rabbits or adult cotton rats. Newborn cotton rats developed fatal disease only in occasional cases.

* This translation was kindly made for the U. S. Hemorrhagic Fever Delegation to the USSR by Miss Bella Kaplan of the Institute of Poliomyelitis and Encephalitis, Moscow, (Director Professor M. P. Chumakov).

Preliminary studies of the cytopathic properties of strain 15 in primary chick embryo cell cultures revealed the development of definite cytopathic changes including changes in the nucleus of the cytoplasm and formation in the cytoplasm of predominantly oxyphilic (less frequently basophilic) inclusions. The nucleus is fragmented. Many cells are rounded, fall out of the sheet, sometimes have short, thin processes. In rounded cells, one can see spherical structures about 1 to 2 μ in diameter surrounded by a light halo. These structures have basophilic staining properties and give intensive RNA reaction. The study of their specific character is in progress.

Strain 15 was found to be highly sensitive to ether and sodium basoxylate. This fact gives grounds to classify strain 15 in the arbovirus group.

The isolate is comparatively unstable to temperature, it is destroyed by heating at 60°C for 30 minutes and by boiling for two minutes.

With hyperimmune sera, in the plaque neutralization test in chick embryo cell cultures, ~~no~~ ^{no} antigenic relationships between the new isolate and viruses of Kemerovo tick-borne fever, tick-borne and Japanese encephalitis, WEE, CTF, and herpes simplex virus. The ~~above~~ data are so far incomplete evidence of the study of arbovirus isolated from man. Its peculiar behavior in different tissue cultures, almost complete absence of pathogenicity for mice, other laboratory animals, and chick embryos, significant cytopathic effect in inoculated tissue cultures, absence of cross neutralization with viruses isolated in Kemerovo region, and with some other viruses, permit the conclusion that this agent is another independent arbovirus found in western Siberia.

Other properties of the isolate are under study.